

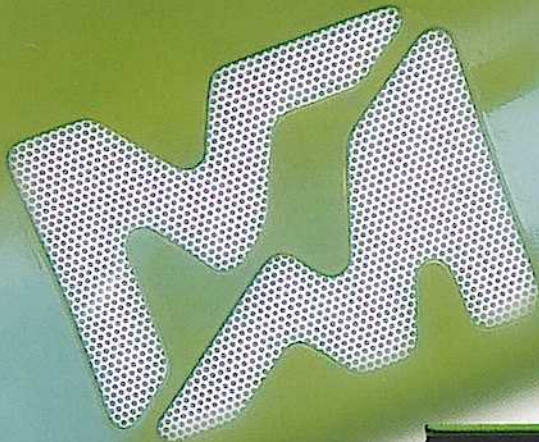


MERLO

COMPANY
WITH QUALITY SYSTEM
CERTIFIED BY DNV
— ISO 9001 —

roto

- 45.21 KTJ
- 45.21 KSC
- 45.19 KSC
- 50.16 KSC



THE RANGE

MODEL		45.21 KTJ ⁽¹⁾	45.21 KSC ⁽²⁾	45.19 KSC	50.16 KSC
WEIGHT					
Total operating weight (with forks)	kg	15400	14500	14400	14200
PERFORMANCE					
Maximum lift capacity	kg	800	4500	4500	5000
Maximum lift height	mm	31700	20800	18800	16400
Maximum forward reach	mm	12700	18000	15900	13400
Lift height at maximum capacity	mm	20200	10700	10200	11000
Reach with maximum capacity	mm	8800	6200	6650	6100
Capacity at maximum lift height	kg	400	2500	3000	3000
Capacity at maximum reach	kg	400	500	500	1000
Total turret rotation		continuous			
Engine		Low emissions (97/68/EC) 6 cylinder turbo			
Power		95 kW (129 HP) at 2400 rpm (ECE 24.03-10)			
SPEED					
Travel speed	kph	11	11	11	11
Road speed	kph	40	40	40	40

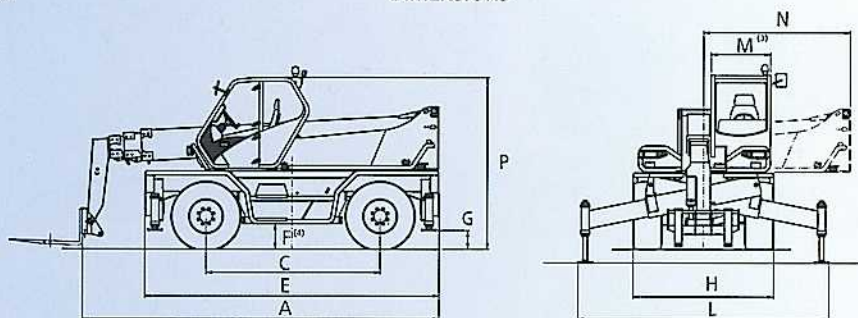
(1) Performance with the "Tower Jib"

(2) Performance of also the 45.21 KTJ with forks, without the "Tower Jib"

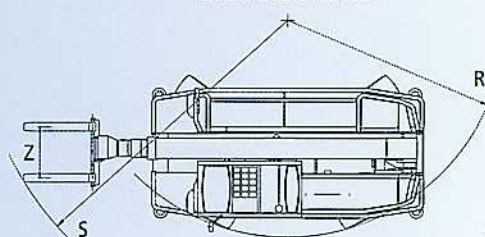
Roto 45.21 KTJ 45.21 KSC 45.19 KSC 50.16 KSC

A mm	6600	6600	6085	6380
C mm	2970	2970	2970	2970
E mm	5030	5030	5030	5030
F mm	360	360	360	360
G mm	410	410	410	410
H mm	2400	2400	2400	2400
L mm	4285	4285	4285	4285
M mm	995	995	995	995
N mm	2505	2505	2505	2505
P mm	2990	2990	2990	2990
R mm	4050	4050	4050	4050
S mm	5850	6100	5150	5900
Z mm	850 ⁽¹⁾	850	850	850

DIMENSIONS



STEERING RADIUS



⁽¹⁾ Internal width

⁽²⁾ 65mm. Shown at suspension mid point

OPERATOR'S CAB

• The structure complies with ISO 3449 (FOPS) and EN 23411 directives.



- Front and rear screens can be opened and are fitted with wipers.
- The door is split into two independent sections.
- Boom and turret are operated by "5 in 1" Merlo electro-proportional joystick.
- As an option a second joystick can be mounted on the seat left arm.
- Instrumentation includes: tachometer/revolution counter, hour meter, fuse box, fuel level,

coolant temperature, annunciator panel showing blocked engine air filter, hydrostatic oil level and temperature, engine oil pressure, coolant temperature, parking brake warning light.



SAFETY DEVICES

- When the machine is working "free on wheels", the CSS system receives its information by sensing the load on each wheel.
- All boom and stabilising hydraulic cylinders are fitted with pilot-operated check valves.
- The "Fail-safe" parking brake type automatically locks when the diesel engine is turned off.

BOOM

- Four telescopic sections (three on Roto 50.16 KSC) of high yield steel, each sliding on adjustable anti-friction pads.
- The extension mechanism and hydraulic pipes are housed inside the boom to avoid any site damage.
- The Merlo design maximises the load capacity at maximum reach.

CARRIAGE

- The front-mounted equipment carriage permits the use of numerous attachments.
- The 'Tac-Lock' hydraulic

attachment locking system allows instant locking/unlocking of attachments, controlled from the cab.

- Two hydraulic service lines are supplied to the carriage, permitting the use of double-acting hydraulic.

FORKS

- Floating type with a length of 1200mm and section 130 x 50mm (150 x 60mm on ROTO 50.16 KSC).
- Centre to centre fork distances manually adjusted from between 450 up to 1050mm.



Options

- Second 5 x 1 electronic joystick
- Crane function remote control
- Rear differential lock
- Electric power generator (4kVA - 220V)
- Cab roof mounted working lights
- Prearrangement for attachments requiring two hydraulic services

Ring of steel

- The structure of the chassis is completed by a solid high yield steel bar, providing a "Ring-of-Steel" as protection to the engine and fuel reservoir, and assuring good stability.

Hydropneumatic levelling suspension

■ The hydropneumatic suspension system ensures maximum driver comfort and safety, whilst eliminating pitching during high speed driving.

■ The hydropneumatic suspension has three modes – automatic, manual and locked.

- Automatic operation is ideal for road travel in high range.
- Switching to the manual mode allows the driver to individually control the four

suspension units, for lateral and longitudinal levelling on uneven ground.

• Finally, the operator can lock all units when positioned. In this mode no shock absorbing function is provided but they ensure safe and stable operation when lifting a load on-tyres.

■ The lateral tilt correction is up $\pm 9^\circ$ (16%), the longitudinal $\pm 5^\circ$ (9%).

INDEPENDENT STABILISERS

- Four independent hydraulic outriggers provide quick and precise positioning. A dedicated single control activates automatic simultaneous retraction of all outriggers.
- The standard equipment includes wider pads for use on low resistance surface.



HYDROSTATIC TRANSMISSION

- The hydrostatic transmission ensures automatic and continuous speed regulation from standstill to maximum speed, simply by operating the accelerator pedal.
- The two speed range gearbox is electrically operated.
- With the "Finger-Touch" system it is possible to change driving direction even when the machine is moving, without the operator having to remove his hands from the steering wheel.
- Permanent four-wheel drive traction, with drop portal axles to ensure excellent ground clearance.

BRAKES

- Servo-operated hydraulic service disc brakes are fitted to all four wheels, operating on the differential output shafts.
- A 'Fail-safe' spring-operated, hydraulic release, disc parking brake is fitted to the main transmission output shaft.

LOAD-SENSING

- The 'Load-Sensing' hydraulic system automatically regulates pump delivery to ensure most efficient use of engine power. Output is regulated throughout the duty cycle, ensuring high performance and highest efficiency.
- Single variable delivery axial piston pump, with "Load-Sensing" control.
- Maximum flow: 120 l/min.
- Operating pressure: 230 bar.

ELECTRICS

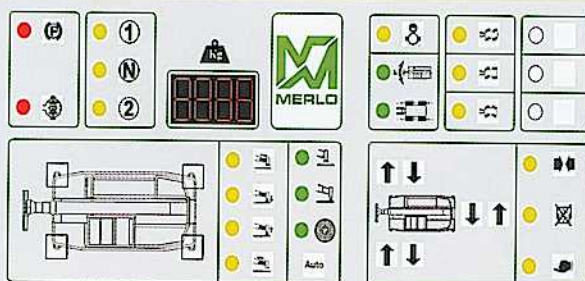
- 12V system with 160Ah battery and 90A alternator.
- Full road lighting and flashing beacon.

Control and diagnostic electronic system

■ Main machine functions are displayed on a digital panel.

■ The same on-board computer also provides a

diagnostic check of all electrical and electronic functions. The condition of each element appears on the control panel's LED display.



STEERING

- Hydraulically powered with automatic wheel resynchronisation in case of misalignment.
- Three steering modes:
 - All wheel steer.
 - Front whecrab steer
 - Crab steer.

ENGINE

- The low emission (97/68/EC) 6 cylinder, water-cooled, direct injection turbo Diesel Deutz engine, is rated at 95 kW (129 HP) at 2400 rpm (ECE 24.03-10).

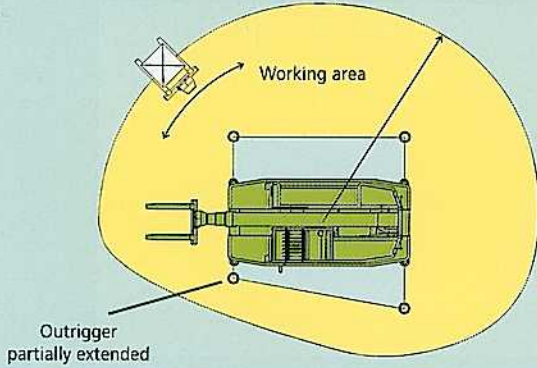


Continuous slew safety technology

■ With the outriggers extended, the Continuous Slew Safety system (CSS) continuously monitors the forces applied to each outrigger. Using these figures, it calculates the centre of gravity of the machine and load, and decides if the predetermined level of stability is guaranteed. Any movement that would

reduce stability below that limit is automatically blocked.

■ The algorithm on which the system is based, is valid whenever the outriggers are extended. In this way the operator can stabilise the machine in any application, confident that the load envelope will be dynamically adapted to his choice.



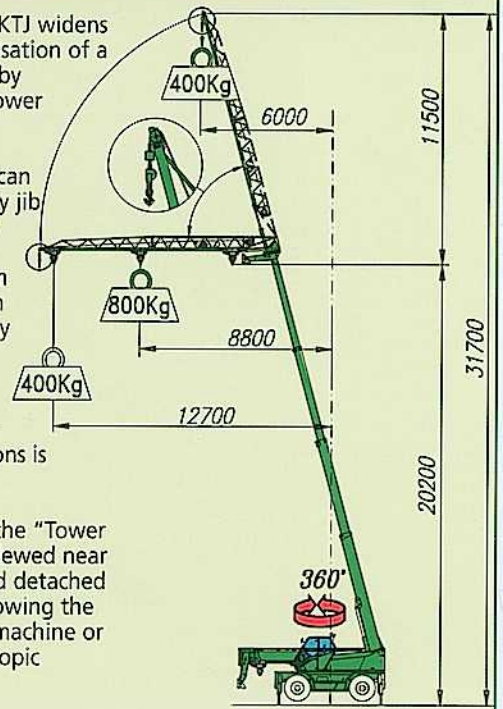
ROTO 45.21 KTJ - Tower Jib

■ The ROTO 45.21 KTJ widens the traditional utilisation of a telescopic handler by being used as a tower crane.

■ The "Tower Jib" can also be used as a fly jib with winch: in this position it can achieve a maximum lift height of 31.7m with a load capacity of 400kg.

■ As an option a remote control for the "crane" functions is available.

■ The structure of the "Tower Jib" can be easily slewed near the main boom and detached from it, this for allowing the road travel of the machine or its full use as telescopic handler.



CAPACITIES

- Hydraulic oil: 130l
- Diesel fuel: 155l
- Hydrostatic oil: 12l
- Engine oil: 12l
- Coolant: 12l

TYRES

- 18-22.5 16 PR

Continuous slew boom

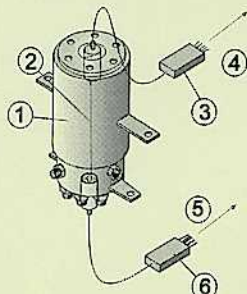
■ Continuous rotation of the turret is possible by virtue of an innovative and patented rotary coupling: all necessary control signals are transmitted through a single channel, unaffected by the angular relationship between transmitter and receiver. This completely eliminates the limits inherent in traditional electrical connections, such as sliding contacts.

■ Two microprocessors (one in the main chassis, the other in the turret), convert electronic control signals into coded pulses: this provides highest reliability, within an airtight coupling, and with minimum size.

■ The stainless steel coupling section also

passes hot water, generated by the diesel engine, to the cab heater.

ROTATING COUPLING (Merlo Patent)



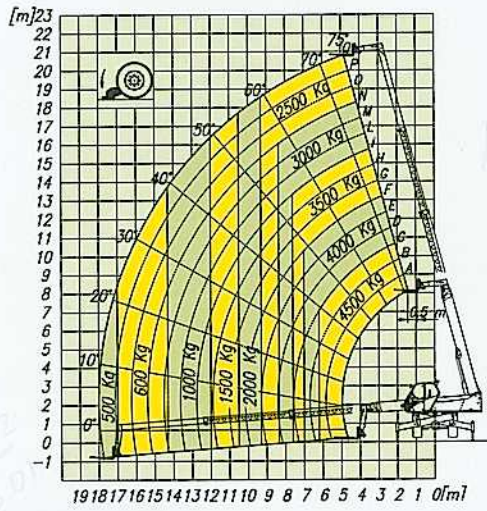
- 1 Hydraulic oil coupling
- 2 One-line transmission
- 3 Microprocessor
- 4 To controls in the cab
- 5 To power controls
- 6 Microprocessor



ROTO KSC

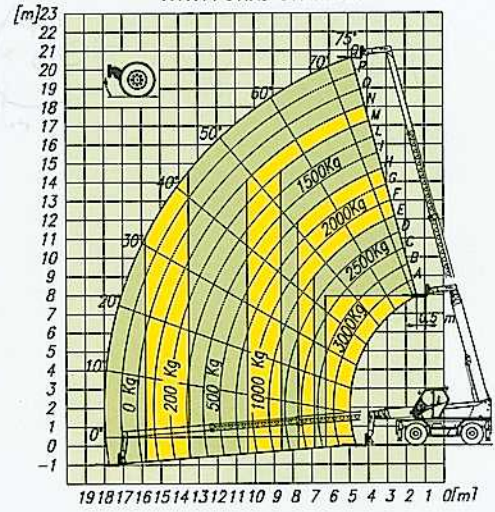
45.21 KSC

WITH FORKS ON STABILISERS



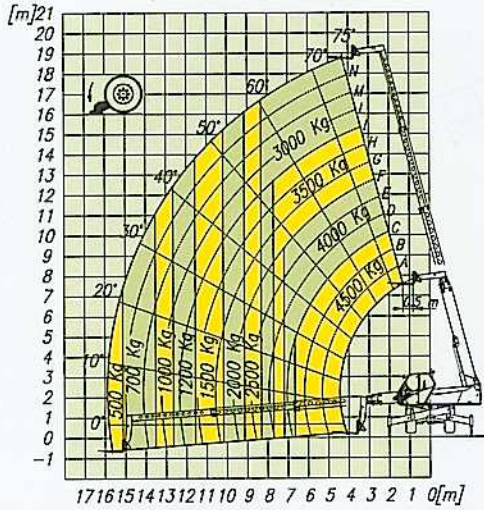
45.21 KSC

WITH FORKS ON TYRES



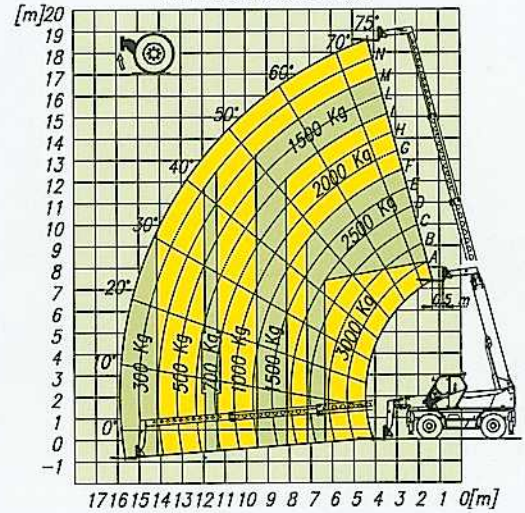
45.19 KSC

WITH FORKS ON STABILISERS



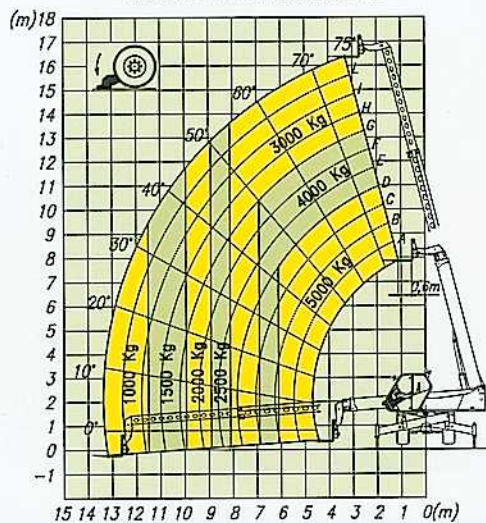
45.19 KSC

WITH FORKS ON TYRES



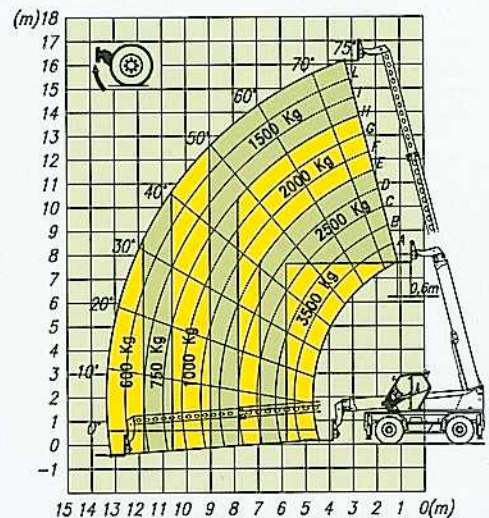
50.16 KSC

WITH FORKS ON STABILISERS



50.16 KSC

WITH FORKS ON TYRES

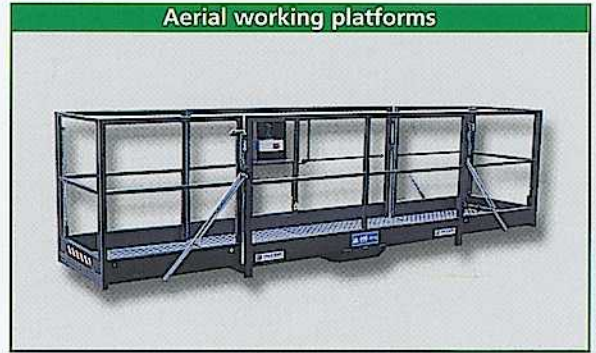


An enormous range of interchangeable attachments and options increase the versatility and performance of ROTO KSC telescopic handlers

Concrete mixing bucket



Aerial working platforms



Concrete skip



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